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ABSTRACT

The paper discusses lexical evidence proposed by Samuel E. Martin, including later revisions thereof by R.A. Miller, concerning a genetic relationship between Korean and Japanese, based on an examination of vowel changes in Middle Korean and Old Japanese. While the author rejects Chinese phonetic evidence as inconclusive and affirms the legitimacy of internal evidence, he does propose revisions for those of Martin's rules which provide only partial correspondence between the two languages. (DD)

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On the Modification of Certain Reconstructions of Proto-Korean-Japanese

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About six years ago Samuel E. Martin published "Lexical evidence relating Korean to Japanese" (=Martin 1966). The article is not without certain weaknesses,[1] and how strong a case it makes for a genetic relationship between Japanese and Korean is debatable. How close the reconstructions offered might be, assuming the relationship is true, to the pKJ originals is more debatable still, but that is a secondary issue and largely beside the point. The primary issue rests upon the matter of how well the correspondence rules work and how well they are supported statistically; the strings of rule numbers offered for each set of cognates are in themselves abstract reconstructions, while the starred phonological forms are little more than semi-abstract recapitulations of them in more human terms.

What is not at all debatable is that Martin has, for the first time, put the question of Korean-Japanese affinity on a rigourously scientific plane. No longer will a random list of look-alike words be acceptable in evidence of that theory. Since if it is true that Korean and Japanese are related it is unlikely that Martin's rules are largely wrong, it behooves anyone who would present other sets of cognates either to show that they are relatable in Martin's terms or to suggest additions or revisions to Martin's rules.[2]

The most serious weakness in Martin's presentation is that he does not make allowances for distinctions between certain vowels of Old Japanese, treating instead with the vowels into which the distinct vocalisms later merged. He was of course aware of the problem, but with somewhat questionable reasoning chose to ignore it on the grounds that the distinctions "are inadequately established for the necessary vocabulary" (193). It is imperative that those vowels that can be distinguished in OJ derive from separate rules; the indeterminate vowels may then be used as potential, half-strength evidence for both rules that would provide the post-OJ forms. This paper will consider some ramifications of an interesting suggestion by Roy Andrew Miller with regard to some of the correspondence rules that must, in any event, be modified.[3]

Miller (1971:66) proposes modifying Martin's rules 16_a and 16_b so that depending on whether the Japanese form has <u>e</u> or <u>ë</u>[4] the reconstructed form should be *<u>ye</u> or *<u>ey</u> respectively. The suggestion is motivated by the possibility that the OJ pronunciations may have indeed been distinguished by a frontal on-glide in one case and an off-glide in the other. Ignoring the possibility of Altaic cognates, there are two kinds of evidence for this view, phonetic and internal, outlined in Miller 1971:63-65 and

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1967:193-194, but reconsidered here.

The phonetic evidence consists mainly in the reconstructed Chinese sound values of the characters used to write the OJ syllables containing the vocalisms in question. The Middle Chinese sound relating to most of the characters used to write OJ Cë (C = f, b, m, k, or g) ended in some approximation of a y off-glide, with the notable exception of 牙 (gë) *ngiiᵉ. Some sounds for Cë characters had similar endings, but some end with an open vowel and some with a consonant (-t or -n). The strongest case that can be made of this is a negative one: ë did not likely end in -y; if ë did, however, it becomes problematical why such characters as 賣 *mai and 計 *kiei should represent -ë, rather than -ë, syllables. Turning to the evidence for ë = [ye], we find that most of the Cë characters have Middle Chinese readings either with a high front vocalism between initial conconant and head vowel or else, as Miller (1971:64) points out, there is reason to associate palatalization as a 'parasitic' feature with the initial consonant in at least the dialect that developed into Mandarin. Most of the Chinese readings for Cë characters also reconstruct with such an on-glide however. The Chinese phonetic evidence is thus in actuality rather inconclusive.[5] Anyway, there are too many problems in the use of Chinese reconstructions for Japanese reconstruction--how accurately is the Chinese reconstructed? where did the Japanese learn their Chinese pronunciation and how closely related was their model to the Chinese dialect that has been reconstructed?--to base very precise judgments on them.[6]

As for internal evidence, a number of interesting clues are to be found in the distributions of ë and ë. First, they are rare. Approximately 2% of the vowels in OJ roots are ë; just over 1% are ë.[7] Even assuming the neutral e, 3% of all root vowels, go back to ë and ë, they remain quite rare. It is well known that these vowels typically occur at morpheme junctures, such as the ends of nouns or as links between verb roots and suffixes. In fact, many of the forms above referred to as 'roots' are themselves partly etymologizable, and the percentage of occurrence in true roots may well be virtually zero. It is thus concluded that the ë's are not original themselves, but are modifications of some other vowel or vowels.

For the derivation of ë there are a few clear cases of ...a-i.. as the source, e.g. takëti, a place name otherwise written with logographs for 'high' (taka) and 'market' (iti). A basic a for the ë of lower bi-grade verb morphology is reasonable[8] (but whether an i was involved or not remains problematical[9]). At least 25 two-syllable and 10 three-syllable nominals in the Man'yōshū end with the vowel ë, and this ë again relates to a in that many of these nominals have a instead of ë when they are the first member of a compound, e.g. amë 'rain': amama 'lull in the rain' (ma 'space between'), sakë 'wine': sakadukĭ 'winecup' (tukĭ 'cup'), etc. (Some neutral e, but no ë, participate in this phenomenon as well, e.g. fune 'boat': funabasi 'pontoon bridge' and kaze 'wind': kazamaturi 'wind[-propitiating] ceremony,' ample

cause to reconstruct *funë, *kazë, etc.) A hypothesis that original final ë becomes a in compounds is not impossible, but the opposite hypothesis that compounding has protected an original a which, "exposed" at the end of nouns, became ë is the more accepted.[10] Why the a became ë is unknown, but one possibility is that some suffix was added, ultimately resulting in an a and an i in direct contiguity (Kamei 1954:28). At any rate, if [a] + X > [e], then X = [i] is a fairly natural hypothesis, with [ay], [æy] or [ey] as possible intermediate stages.

Some relationship of ė to a is also clear. The roots of verbs of the quadrigrade conjugational paradigm may be followed by the suffix -ėr- to form stative verbs. This -ėr- conjugates in a paradigm unique to a small number of verbs and conjugating suffixes (which will henceforth be transcribed ..r(*)-, e.g. -er(*)-, to indicate "special conjugation for r-final roots") all of which have r as root final and all of which have stative meaning; there can be little doubt that all of them are derived from the stative verb par excellence, ar(*)- 'be,' which is probably blended in the case of -ėr(*)- with the continuative suffix -ǐ. Another suffix, -kėku, is used to derive a nominal form from adjectives, and comparison with a similar derivation from verbs provides strong evidence that -kėku is -kǐ + *aku. Kėsa 'this morning' must have asa 'morning' as its second element, although only kö, not *kǐ, is attested for 'this.' There is, to be sure, no evidence for a denominal noun-formant -a to account for the very few words known to end in ė, including mė 'woman,' ifė 'house,' kakė 'chicken,' tafė (kind of cloth), nor is there any strong evidence to suggest more basic roots in -ǐ for these words; however, a possible ?mǐ 'woman' for comparison with mė shows up in the pairs of words izanamǐ/izanakǐ (names of the first female and male deities respectively) and womǐna 'woman'/okǐna 'old man' (no semantic mismatch--these words refer to the stage of life following that of greatest sexual attractiveness as wotömė 'girl' and wotökò 'man'). And there is at least some evidence for a deverbal noun-formant -a[11] which could conceivably be involved in these -ė words as well.

The distribution of ė and ë provides one more piece of evidence that the vowels differed in terms of such an onglide as y-. Although they occur morphophonemically after almost all consonants in verb conjugation and/or noun termination (actually, there may be no evidence to reconstruct *zė, *dė, *nė, *yė, *wė or 'ė, but there is no particular reason to believe these syllables did not exist), they are phonemically neutralized after s, z, d, n, y, t, and r. If the vocalic contrast is [e]:[ye], this neutralization becomes quite analogous to the neutralization of [u]:[yu] after s, z, t, d, n, y, r, etc. in many English dialects. Now, supposing that, e.g., *dė = *[dye] > [de], this is an argument against ë = [ey] in OJ, for *[dey] should have been distinguishable from [de]. The reverse might have been true, with apical consonants producing a y before front vowels; *dė = [dye]; *dë = *[dey] > *[dyey], then > [dye] by dissimilation, but this matter

is of little moment here, because the evidence for ë = [ey] or the like remains as strong as ever for a pre-OJ period, and thus possibly for the proto-Korean-Japanese period.

It is, then, reasonable to hypothesize *ye in the history of è and *ey in the history of ë. Now, what happens when these hypothetical values are applied to the reconstruction of pKJ forms? Only 15, or 4.7%, of Martin's proposed Japanese cognates to Korean words have e in them, a natural consequence of that vowel's low frequency in native Japanese words, and all of them occur at the end of nouns. They are listed below, with Martin's tag numbers and reconstructions, the Middle Korean and OJ forms and glosses, and Miller's revised reconstructions (1971:67):

No.	Martin	MK	OJ	Miller
7	6-17-5aa-16a (*taxye)	tay[12] 'bamboo'	takë 'id'	*taxey
45	6-5c-19b-1c-16b (*txumpye)	thop 'claw'	tumë 'id'	*txumpey
79	1-17-6a-26-5a-16b[13] (*pataxye)	path 'field'	fatakë 'id'	*pataxey
127	14-18-12d-16b (*swalğye)	sul 'liquor'	sakë 'id'	*swalğey
146	6-(5c-)21e-4a-16b (*t(x)ákye)	thɔk 'hillock'	takë 'peak'	*t(x)ákey
244	4-17b-1c-16b-(ok) (*kampye)	kepok 'tortoise'	kamë 'id'	*kampey
[The three examples that follow have OJ e < *ë]				
18	1-21-7b-16a (*pɔnye)	pɔy 'boat'	fune 'id'	*pɔney[14]
56	2-19-11-16a (*murye)[15]	mïli 'group'	mure 'id'	*murey
56'	2-19-11-16b "	mul "	"	"
56"	2-19-11-(e) (*mur)	" "	mur(ë)- 'gather'	---
247	6-19-11-5c-16b (*turxye)	tulh 'two'	ture 'companion'	*turxey
[The original value of e in the next four examples is unknown]				
6	9c-16a (*tsye)	ti- 'carry on back'	se 'back'	...
21a	1-25-16-7b-16b (*pYenye)	spyë/pspyë/ sp(y)ëy 'bone'	fone 'id'	...
21a'	1-25-16-(ne) (*pYe)	"	"	---
21b	1-16-7b-16a (*penye)[16]	*pëy 'bone'	"	...
29	1-19-6b-16b (*pudye)	put 'brush'	fude 'id'	*pudey?
147	2-20c-7b-16a-28 (*myonyex)	moy(h) 'mountain'	mine 'peak'	*myoney
89	0-17-12c-1a-5c-16b (*alpxye)	alph 'front'	*(ma-)apë 'id'	...
113	10-15-1a-16b (*jibye)	cip 'house'	ifë 'id'	...

Miller's modifications will require an expansion of Martin's rules 16a (currently *(n,r,ts,5aa)ye > i/y:e) and 16b (*..ye > ..#:..e) as follows (reflexes are cited in the form MK:pre-OJ):

16a *(n,ts)ye > i/y:ë (for 6? 21?)
16a' *(n,r,ts,5aa)ey > i/y:ë (for 6? 7, 18, 21? 56? 147)
16b *..ye > ..#:ë (for 29? 89, 113)
16b' *..ey > ..#:ë (for 45, 56b? 79, 127, 146, 244, 247)

Rule 16a comes out very weakly supported, and 16b not much stronger, but 16b' at least looks like a relatively well-founded rule.

Note, however, that these rules would presume that the development of OJ ë from a and the hypothetical i predates the Korean-Japanese split. Although a similar phenomenon has occurred relatively recently in the history of Korean,[17] there is no evidence that two forms of the Korean words involved in rules 16a' and 16b' existed in parallel with the two forms of the Japanese. It is therefore possible that the process resulting in OJ ë postdated the split, in which case the rules should again be revised to give the earlier Japanese forms:

16a' (revised) *(n,ts)a? > i/y:(*)a
16b' (revised) *..a? > ..#:(*)a

The "*a becomes Korean i/y" of 16a' (revised) is phonologically uncomfortable; this remains, as noted early in this paper, a secondary issue, but the rule might be worked into rule 23a, *..ya > i:a; see also rule 21dd, *a > i< ʔ:a.

The most persuasive benefit of the revisions is that 16b' can be abolished immediately and the cognates accounted for it can be relisted as examples of rule 23, *(C)a > #:a, of which these examples later underwent a change ..a + i(?) > ..ë in Japanese only. Thus it is possible to account for the OJ ë ≠ ë distinction in Martin's framework with an increase of only one rule at most, and probably come out with a net decrease by redistributing the revised 16a' examples as suggested and eliminating the revised 16a as insufficiently supported.

It is not clear how far Miller intended carrying the revision of *yV rules. At one point he rewrites Martin's pKJ *xyari 'fog' as *xayri "using the revised formulation suggested in [the discussion of OJ ë vs. ë]" (1971:72), presumably to account for the probability of a frontal off-glide being involved in OJ ï. With this exception, however, he continues to use Martin's reconstructions unrevised, e.g. *pyal 'fire' (145) corresponding to OJ fï.

The evidence for OJ ï deriving from *ö + i(?) or *u + i(?) roughly parallels that for the derivation of ë cited above. It is not certain that any sure cases of *..ö-i.. > ..ï.. can be cited[18] but there are at least two clear instances of (*)ö/ï alternation, comparable to the forementioned a/ë alternation, in kï 'tree' vs. kökagë 'shade of tree,' etc. and fï 'fire' vs. fokagë (*fökagë) 'firelight,' etc. (kagë 'the light/shadow which something casts').

There are very few cases of root-internal ï,[19] while i plays a role in the morphology of upper bi-grade verbs exactly parallel to that of ë in lower bi-grade verbs, with ö or u, instead of a, in related roots.[20]

Seven of Martin's rules, namely 15 (*i > i:i), 15a (*..i > ..ï:..i), 15b (*ya > ï:i), 15c (*yi > ë:i), 15d (*..yi > ..#:i), 20c (*yo > ..o:i), and 20d (*yɔ > ɔ:i), give i in Japanese. Rules 15, 15a, and 15c have no examples with attested OJ ï to provide direct evidence that any of these rules must be revised, although the many neutral i must be viewed with suspicion.[21] Rule 15b is the one that would require changing to accommodate Miller's *xayri- 'fog'; two Japanese examples of this rule have undistinguished i, and one, *myaldu 'water,' has ǐ in OJ mǐdu. There is one other example aside from 'fog' that has OJ i, namely *pyal > fi 'fire.' If the Korean -l in this and five other nouns (rule 12b, NOUN*l# > l:#) should prove to be a purely Korean post-KJ-split addition, and if the pre-OJ form for 'fire' was *fə, the pKJ form could be *pə́ under rule 21c (*ə́ > ï(/a) < ɔ:o, of which five OJ examples have ö attested, and at least two of the remaining three examples are probably also *ö). With at least the form for 'fog' remaining to account for, however, 15b still requires revision but lacks an obvious solution.

Rule 15d, with 12 neutral i and one form not found in OJ, has three examples of ǐ which might fit the rule as is and one ï in OJ tukï 'moon,' requiring revision of the pKJ form *tɔlǧyi. This could perhaps be *tɔlǧu 6-21-12d-l?c, becoming *tuku in pre-OJ, which the same ï-like suffix invoked repeatedly above would make tukï. Whether further revision in this rule is necessary becomes a moot question.

Rules 20c and 20d are similarly plagued by a majority of neutral i, with just enough cases of OJ ï and ǐ to indicate that some revision is necessary.[22] Following Miller's scheme, there would be a 20d', *ɔy > ɔ:ï, but to account for only one case of fairly certain OJ ï: *kɔytsyi (revised from *kyɔtsyi) > OJ kïsi 'brink.' Even assuming *ï for some of the OJ neutral i under this rule, it is possible that they could be redistributed to rule 21, *ɔ > a<ɔ:u, 21a, *ɔ > a?<ɔ:u, or 21aa, *ɔ > ï?<ɔ:u, with later development of the Japanese u in these cases to ï. Thus revision of 20d must be left with a question mark.

Of the ten examples of 20c, fully eight have OJ i in neutralizing environments, leaving one case of ï in OJ mï 'body' and one of ǐ in mǐne 'peak,' hardly better grounds for revision than in the case of 20d. There are two rather interesting possibilities for examples of this rule, however. Suppose that 20c be left as is, but with ǐ for Martin's i, to account for mǐne and as one alternative possibility for the eight neutral i, and a new rule modeled after Miller's proposal be hypothesized for mï and as a second alternative for the eight ambiguous cases: 20c', *oy > o:ï, with *myom 'body' revised *moym. Among the eight remaining cases is *dyoš 'stone.' If OJ isi 'stone' goes back to a pre-OJ form with root-internal ï, i.e. *yïsï/*yïsi, then it would belong

to rule 20c' and be revised to *doyš.[23] This results in a form one degree closer to the possibly cognate proto-Altaic *tə̈l$_2$ 'stone.'

The loss of the final m in the Japanese reflex of *myom/ *moym 'body' is accounted for with rule 2b, NOUN *..m# > m:#, supported by seven examples. It is almost equally reasonable, however, to suppose that, instead of Japanese losing a final m from all(?) nouns, Korean may have under certain circumstances added a suffix -m (related to the deverbal nominalizer -m?) to nouns. If so, then 'body' could have been simply *mo, 2-20-(m:i), with OJ ö replacing J o in rule 20, *o > o:o.[24] While there is evidence that Japanese mi is to be associated with mu-,[25] a case can also be made for *mə̆- if only on the grounds of the comparison of mogak- 'struggle, writhe, squirm' with agak- 'paw the ground, struggle, flounder' and a- 'foot.'

This leaves only the possibility that some of the eight i under the original rule 20c might come from *ï to suggest that 20c' is still needed. One of those eight, the *doyš 'stone' already discussed above could conceivably be eliminated. If the sound represented by š is in fact, as the character usually means, a palatalized form of s, which is so to speak a simultaneous s and y, then by virtue of its y-like feature š might be enough to trigger the change of o to ï in the environment _š. This would reduce pKJ 'stone' to *doš 8-20-14cc-(22) > tol:*yoš(V) > isi, with a reconstructed form still closer to the proto-Altaic. The cost of embracing this last suggestion, however, could be considerable. Additional speculative manipulations would be required to save *tošyi 'year' (and what would šy mean?) which, with *o(š) > OJ ï, would result in the unattested form *tïsi rather than tösi. And if š had the hypothesized effect on o, it would be expected to have an analogous effect on the other vowels, which would put 10 of the other 11 examples of *š cognates (rules 14c, 14cc) in jeopardy as well.

In summary, the tentatively postulated modifications of, additions to (+), and deletions from (-), Martin's rules and examples (198-225) would be as follows:

KEY	PROTO-KJ	K:J		RECONSTRUCTIONS	
2b	NOUN *..#	(+m):#	I	body	mo
				hemp	(a-)sa
				morning	atsxá
				pigweed	piǩɔ
				summer	nYalɔ
			II	crane	turu, tur(u)
				persimmon	ka

7b (Revision to save revised formulations of 'boat,' '2mountain,' 'bone'?)

12b[26]	NOUN *..#	(+1):#	I	bunch	taba
				fire	pɔ
				green	(a-)bxɔ
				needle	paryɔ
				sea	balá
			II	cheek	po
+12b'	NOUN *..#	#:(+i)	I	bamboo	taxa
				?boat	?pɔna
				body	mo
				claw	txumpa
				crowd	mur(a)
				field	pataxa
				fire	pɔ
				liquor	swalğa
				moon	tɔlğu
			II	tortoise	kampa
			III	two	tura
15	*i	i:ɪ̆		(Same as in Martin, with house, [3]mountain, soup, and straw questioned due to ambiguity in the pre-OJ value of i.)	
15b	*ya	i:ɪ̆	I	water	myaldu
				?enter	dyar-/dayr-
			III	?soup	tsyaru/tsiru/ tsayru
+15b'	*ay(?)	i:i	I	?enter	dayr-/dyar-
				?fire	pay/pɔ
			III	fog	xayri-
15d	*..yi	..#:..ɪ̆	I	oyster	kwalğyi
				spade	salpyi
				[1]time	cekyi
				[2]time	cokyi

(Excepting moon, the remainder of Martin's examples should be retained, but with question marks in case they derive from *..ɪ̆, in which case they might be *..u ...-19c-12b'.)

-16a

+16a'	*(n,r,tx,5aa)a	i/y:a	I	bamboo	taxa
				?boat	?pɔna
				crowd	mura
				?[2]mountain	myonax
				?bone	pɪ̆ena/...
				?back	tsa

16b	*..ye	..#:..ė	I	?brush	pudye/puda
				house	jipye
				?[2]mountain	myonye(x)
			II	front	alpxye
20	*o	o:ŏ	(Delete love; question [3]mountain, [4]mountain, cheek, release, accumulate, distil, see, which may have *o̯; the remaining twelve examples stand as is.)		
20c	*yo	o:ĭ	I	[2]mountain	myonax/myone(x)
				?[4]mountain	moryo/moro(y)
				?stone	dyoš/doyš
				?tail	tsxyori/ tsxoyri
			II	?follow	tsyocağa-/ tsoycağa-
				?release	nyoğ-/noyğ-
				?stare	nyory-/noyry-
			III	?board	dyolya/doylya
				?scorch	nyoř-/noyř-
?+20c'	*oy	o:i	(The eight questioned examples of 20c might go here, but *i is statistically far less likely than *ĭ for Japanese)		
20d	*yɔ	a,ĭ(/a)<ɔ:ĭ	I	?flesh	syɔš/sɔyš
				?needle	paryɔ/parɔy
			II	?know	syɔr-/sɔyr-
			III	cut	kyɔr-
				dirt	kyɔla-
				?spear	járyɔ/járɔy
+20d'	*ɔy	a,ĭ(/a)<ɔ:i	I	brink	kɔytsyi
			(Add the four questionned examples under 20d; again 20d [*i] is the more likely)		
21c	*ɔ :o	ĭ(/a)<ɔ:ŏ	(Add fire pɔ)		
23	...	...	(Add to Martin's 16 examples:)		
			I	brush	puda/pudye
				claw	txumpa
				?crowd	mura
				field	pataxa
				liquor	swalğa
			II	tortoise	kampa

III ^{1}mountain t(x)áka
two turxa/tur

26 (Seems to require revision for at least enjoy, field; should perhaps be reconsidered in conjunction with the "echo" vowel rules, 22(..).)

Rules 20a, 20b, 21b, 21b', 21bb, 21c', and 21cc, which need reconsideration on the question of whether the Japanese o was ȯ or ö, but will not be examined here.

If all the above modifications were accepted, the lexical items that would need re-reconstruction or additional alternative reconstructions include the following:

6. BACK 9c-16a-12b' *tsa
7. BAMBOO 6-17-5aa-16a'-12b' *taxa
17. BOARD ... or 8-20c'-12-23a *doylya
18. BOAT 1-21-?7b-16a'-12b' ?*pɔna
19. BODY 2-20-12b'-2b *mo
21. BONE 1-25-16-?7b-16a'-12b'?*pYenye, or 1-25-16-(J ne) *pYe, or 1-25-16-?7b-16a'-12b' ?*pYena, or 1-16-?7b-16a'-12b' ?*pena
28. BRINK 4-20d'-9d-15d *kɔytsyi
29. BRUSH ... or 1-19-6b-23-12b' *puda
32. BUNCH ... *taba
33. BURDEN Delete on basis of OJ nö-?
43. CHICKEN ... or 6-21b-11b-19c-12b' *tɔrku
44. CLAN ... or 0-19-12a-5c-19c-12b' *uldxu
45. CLAW 6-5c-19b-1c-23-12b' *txumpa
56. CROWD 2-19-11-23-1b' *mura
76. ENTER ... or 8-15b'-11 *dayr-
79. FIELD 1-17-6a-?26-5a-23-12b' ?*pataxa
82. FIRE 1-21c-12b'-12b *pɔ (*pɔl?) or 1-15b'-12b *pay
83. FLESH ... or 14-20d'-14cc-22 *sɔyš (*sɔš?)
85. FOG 5-15b'-11-15a *xayri-
86. FOLLOW 9b-20c'-9a-?26-5b-23 ??*tsɔycağa- (Lacks source of OJ ...f-.)
94. GREEN ... *(a-)bxɔ
104. HEMP ... *(a-)sa
121. KNOW ... or 14-21d'-11 *sɔyr-
127. LIQUOR 14-18-12d-23-12b' *swalğa (or 14-18-12d-22-12b' *swalğ?)
132. LOVE ? (Rule 20 no longer applies.)
143. MOON 6-21-12d-19c-12b' *tɔlğu
144. MORNING ... *atsxá
146. ^{1}MOUNTAIN 6-(5c-)21e-4a-23(or 23a?)-12b' *t(x)áka
149. ^{1}MOUNTAIN ... or 2-20-11-20c' *mɔroy, or 2-20-11-20-12b' *moro
153. NEEDLE ... or 1-17-11-20d'-12b *parɔy, or 1-17-11-21c-12b'-12b *parɔ

166. PIGWEED ... *piǐɔ
181. [2]RELEASE ... or 7-20c'-5b *noyǧ-
190. SEA ... *balá
191. SEABREAM Delete (6, 18a, 1d, 15a).
210. SOUP ... or 15b'9c-15b'-11-19c *tsayru
213. SPEAR ... or 10-21d-11-20d' *jarɔy, or 10-21d-11-21c'-12b' *jarɔ
224. STONE ... or 8-20c'-14cc-22 *doyš (doš?)
227. STUPID Delete "20c/" from Martin's 16-11-20c/22e.
230. SUMMER ... *nYalɔ
236. TAIL ... or 9b-5c-20c'-11-15a *tsxoyri
244. TORTOISE 4-17b-1c-23(22?)-12b'+ok/up *kampa
247. TWO 6-19-11-5c-23-12b' *tura

Notes

[1]The paucity of attempts to build on Martin's work since its publication suggests that molehills of weaknesses have been seen as mountains, and it would be a disservice to exaggerate them here. To be sure, not everyone will be as satisfied with the meaning correspondences as Martin was, but the superstition-ridden science of word-meaning has a long way to go before one will be able to say objectively that, for example, Korean 'fly' and Japanese 'ride' (correspondence, rather etymology, 185, p. 240) are not likely to be descended from a single source. Some of the apparent meaning problems are only apparent. One should not reject HUSBAND (etymology 114, pët : wotö(-kó), p. 234) out of hand on the grounds that it would make wotö-mé 'girl' out to be 'husband-woman'; reducing the meaning to that of the Korean form, COMPANION, brings it back into the range of possibility.

What is perhaps most needed is a mathematical evaluation of the probability of finding correspondences between Korean and Japanese with the number of rules Martin uses. With an unlimited number of rules one can match any two languages, and having done so, still have some residue probably even after eliminating all examples (and the rules supported by them) that involve any rule not supported by more than one example. There are dozens of look-alikes between Japanese and English. It seems quite possible that someone ignorant of the histories of those languages and foolish enough to try might be able to make something of the correspondences, which include such convincing examples as ya:ea (tya:tea, yas[-u-,-asi-]:eas[-e,-y]) and -akar-:-easur- (takara: treasure, hakar-:measur-), etc. So the question is, how many more correspondences does Martin have than would result from sheer coincidence?

A few individual errors in Martin's reconstructions are noted in the course of this paper. To these must be added SEA-BREAM, the reconstruction of which would result in Japanese *tabi, not the correct tapi. Had Martin not rejected it before press-

time on other grounds (but too late to delete it from the lists of correspondences and etymologies), etymology 37, CAGE 0-20b/16-11-15a *ori/eri, would have had 11-15a (*ri > ri:ri) in contradiction to correspondence 11aa (*ri > i:ri). If this brief paper contains only three times as many such errors as Martin made, I will be quite satisfied.

[2]Ironically, Miller, who concurs on the undesirability of random partial correspondences as evidence (1967:62-63) and professes to be quite convinced by Martin's work (1971:20), nevertheless suggests as an alternative to etymology 125, a perfect match by the rules of Korean coh- 'good, like' and Japanese suk- 'like,' one linking the Korean form with Japanese yo- 'good' with the reconstruction *iox-, even though that would result in non-existent Japanese *yok- by correspondence rules 10-20-5a (1971:289).

[3]The paper is a detailed presentation of some ideas briefly mentioned in Mathias 1972.

[4]The so-called "kōrui" vowels are here transcribed ɪ̈, ë, and ö in distinction from the neutral vowels i, e, and o. The transcription of the "otsurui" vowels as ï, ë, and ö conforms to a common practice. Often there is no textual evidence to indicate which of the non-neutral vowels actually occurs in a given word; these are transcribed I, E, and O, following another of Miller's suggestions (1971:273).

It is an unfortunate fact of scholarship in the field of Old Japanese that with a few notable exceptions, e.g. Kamei 1954, Wenck 1954-9, Sanseidō 1967, it has confounded the kōrui vowels with the neutral vowels in transcription. Of course, this conforms to phonemic practice: there is no minimal pair contrasted by a kōrui vowel vs. a neutral vowel, therefore they cannot be phonemically distinct. However, it is equally true that otsurui and neutral vowels never contrast, and thus they cannot be phonemically distinct either. Phonemic practice vs. phonemic theory presents analogous problems in English. If, e.g., the vocalism in 'kin' is /I/ and that in 'keen' is /i/, what is that of 'king'? To equate it with either /I/ or /i/ (naive native speakers differ about which sound it is) implies the existence of the impossible English contrast /kIŋ/ ≠ /kiŋ/.

Aside from such problems entailed in the purely descriptive use of phonemic transcriptions, it can also tend to muddy the historical waters. Neutral e, for example, plays the morphophonemic role of ë in such forms as OJ mate (mat-ë) 'wait,' and the role of ï in mateba (mat-ï-ba) 'when ... wait(s).' Similarly, the rules of intra-root vowel concord in Japanese ("vowel harmony"), the strongest of which is that kōrui 'o' and otsurui 'o' do not co-occur, appear to be broken when one cites, e.g., the OJ form for 'halberd' as fokö in a system where o also stands for kōrui 'o'. How much more comfortable to be able to say "ö and ö do not co-occur in roots; o, being neutral, may co-occur with either."

[5]For an excellent elucidation of the Chinese evidence for the reconstruction of OJ sound values, see Lange 1968. For Lange, however, the Chinese evidence completely outweighs the internal evidence, leading him to unprecedented reconstructions of some vowels in some contexts, and exposing/creating some horrendous morphophonological problems.

[6]There are other kinds of limited phonetic evidence. One is the transcription in man'yōgana of foreign words from other languages than Chinese of which the contemporary phonology is known. Unfortunately, most non-Chinese loans are from languages of which the phonology is not known (a few words from an old Korean language, and some perhaps from Ainu), or they have been indirectly borrowed, as Sanskrit through Chinese. There are a very few likely cases of direct borrowing from an Indic language, the best of which are sOtOba : stūpa, which is not found in OJ and thus tells us nothing, and fotOkë : Buddha, which would relate ë to a. (Sanseido 1967:657 declares the questionable O to be ö, apparently on the basis of a single transcription in the Bussokuseki no uta, in which tò and tö are known to be confused.) Another kind of phonetic evidence is Sino-Korean; since the Koreans first got Japan seriously involved with Chinese some relationship between the history of Sino-Korean and man'yōgana values is likely. For the most part, Sino-Korean as evidence is ambiguous in the same way as the Chinese, but there is one interesting fact bearing on the distinction of è and ë, and ǐ and ï. The premodern transcription of Korean readings of many of the otsurui characters with velar initials had ɯi as the vocalism, reinforcing the notion that there was no palatalization at the consonant-vowel juncture in the otsurui syllables. However, the Korean readings of man'yōgana for velars + è are equally unpalatalized.

[7]Statistics cited in this paper are from work in progress, tentatively entitled "Phonological patterning in Old Japanese," which has had support from the Indiana University Office of Research and Advanced Studies and from the I.U. East Asian Studies Program.

[8]Ōno 1953a and Miller 1967:322-4, following and in some respects improving on Ōno, reconstruct lower bi-grade verb roots (..(ë)-, e.g. (ë)- 'to get' [a unique 'rootless' verb], mak(ë)- 'to give in,' wof(ë)- 'bring to an end,' etc.) as *..a-, in part presumably to account for their frequent relationship to verbs of ..ar-, ..as-, etc., form, e.g., respective to the examples just cited of (ë) verbs, ar(*)- 'there is' (?), makas(ë)- 'leave up (to),' wofar- 'come to an end.' There is also an occasional relationship between (ë) verbs and adjectives with root-final a, e.g. sem(ë)- 'close in on' ~ sema- 'small, close,' as(ë)- 'fade, wear thin' ~ asa- 'shallow,' tak(ë)- 'reach acme' ~ taka- 'high,' ak(ë)- 'brighten, dawn' ~ aka- 'bright, red,' fuk(ë)- 'deepen' ~ fuka- 'deep,' kar(ë)- 'lose water content' ~ kara- 'salty, hot-tasting,'

ar(ë)- 'grow rough, dilapidated' ~ ara- 'rough,' fay(ë)- 'grow' ?~ faya- 'quick.'

Incidentally, part of Miller's intended improvement of Ōno is obscured by the erroneous retention of the latter's special endings for "Class A'" verbs in table 7, Miller 1967:322. Miller's approach would have identical endings for Class A and Class A'.

[9]At one point, Miller reconstructs and identifies an -i- suffix as an endoactive--exoactive reverser attached to the indefinite form of the verb, related to a similar suffix in Korean (1967:65-6). One wonders whether he might not have carried through in the discussion of verb inflection origins cited in note 8 by abolishing the indefinite suffix of Class B verbs, to which all of those with the reconstructed -i- would belong. There would be problems--perhaps partly resolvable in terms of vowel concord--with the class B verbs ending in ö- and u-, but might lead to a solution of a major problem ignored by both Miller and Ōno in their inflection-origin hypotheses: the relationship of lower bi-grade and quadri-grade verbs on the same root.

[10]Statistics, as shown in the chart below, provide a nice bit of circumstantial evidence that noun-final a, as well as noun-final ö and u, have indeed undergone a change. The figures show a sharp distinction in the rates of occurrence of the vowels in question between last and non-last syllables in 76 one-syllable, 470 two-syllable, and 343 three-syllable nouns of the Man'yōshū. Unfortunately, it is impossible to give accurate figures for ë and ï, since many of them have been neutralized or are not attested in man'yōgana; in these cases the range from minimum to maximum possible is indicated.

Syllable	a	ë~ë+e+E	ö	u	ï~ï+i+I
1st of 2	39%	0~3%	5%	22%	0~12%
1st of 3	41%	0~1%	5%	20%	0~16%
2nd of 3	40%	0~1%	5%	28%	0~9%
last of 1	22%	2~17%	3%	9%	5~23%
last of 2	24%	5~14%	4%	9%	2~23%
last of 3	20%	2~13%	2%	5%	3~29%

[11]Sakakura 1966:286ff; Mathias 1963.

[12]Martin marks Middle Korean and Standard Japanese accentuation, but since accent is not taken into account in his correspondence rules (and SJ accent has undergone too much simplification to be especially relevant to any such rules), it will not be marked in this paper.

[14]With Miller's revision of the pKJ forms for etymologies 18 and 147, rule 7b, which deletes the n from the Korean form, is no longer operative as it stands.

[15]This reconstruction would give MK muli, identical to the modern form. Martin (1966:226) suggests that the distinction ï ≠ u was a purely orthographic convention after labials in Korean.

[16]Martin 1966:226 misprints "25" for the proper "16" in the rule sequence for this reconstruction.

[17]It seems to have been a productive phenomenon in MK that suffixation of -i.. to an open syllable resulted in a single syllable. Some such forms fossilized and, in modern Korean at least, have gone through partial assimilation and reduction, e.g. na-i 'me (nominative)' > [næ].

[18]Sanseido 1967:xxx states there are many cases of ï deriving from the sequence of ö i or u i, but provides no handy examples. One sometimes sees mention of ofo + isi > ofisi (e.g. Miller 1967:193), but this seems to be unattested except as an explanation of why the eighth poem of the Nihonshoki has ofoisi where the otherwise identical thirteenth poem of the Kojiki has ofïsi.

[19]Only two examples turn up in my list of some 2000 OJ words: kïr- 'fog' and mïna 'all.' Nine other words with ï before a consonant are on the list, but are either compounds on 'fog' or analyzable at the ï. There are in addition 397 occurences of indeterminate I (52) or neutral i (345) before a consonant, of which some 25 are probably *ï (based on the ration ïC/ÏC = 11/173), but a careful check would probably reveal these too to be mainly at morpheme boundaries.

Incidentally, one of the annoying problems in hypothesizing an ï/ï distinction in terms of [yi]/[i] or [i]/[ɯi] is that the distinction 'ï ≠ 'ï, which should be possible by any such formula, is unattested. Considering the great rarity of ï and the fact vowels unpreceded by consonants are virtually restricted to word-initial position in pure Japanese, it could very well be the case that 'ï was canonically possible but simply did not happen to occur in any phonologically transcribed OJ word.

[20]E.g., okör- 'occur, arise'~ok(ï)- 'get up,' sugus- 'let pass'~sug(ï)- 'pass.'

[21]The Japanese correspondence ni for pKJ *ni- 'burden' under rule 15 is probably pre-OJ *nï < nö + ï. Cf. nösaki 荷前 (tributary offering of the first harvest), nör- 'board conveyance,' nös(ë)- 'load, put aboard'.

[22]*ëry(o)- 16-11-20c/22e 'stupid' is an invalid example for 20c, since it would result in *ëlo- : ori-, rather than the proper ëli- : orö-.

[23]The *y is not involved in the rule for *d > y.

[24]There is only one example of OJ ȯ, in kȯf- 'love,' under this rule, while 12 are secure or very probable ö and only five are indeterminate. It has frequently been hypothesized that OJ ȯ and ö were distinguished by a feature of labiality, with ö being the non-labial (Ōno 1953:139,141,142,154-5,156 [Ōno cites, but rejects, various presentations of the hypothesis]; Mathias 1962: 16-9; Lange 1968:264-6); the most compelling evidence is the fact that the distinction was neutralized just after labials, with the relationship (ablaut-type) of ö and a, and the doublets on, and other confusion between, ȯ and u providing strong support. Rule 20, relating OJ ö to the very rounded Korean o, is in sharp conflict with this hypothesis. On the other hand, rules 16, 21b, 21bb, and 21c relate ö to less rounded Korean forms.

[25]As in mukurö 'body,' and perhaps mune 'breast.'

[26]Actually, as it belatedly occurs to me, it is not at all necessary to modify Martin's 2b and 12b to allow for the Japanese "+ i" hypothesis, provided only that 2b and 12b operate before 12b'. The modification is allowed to stand here however as a viable and potentially interesting alternative hypothesis.

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